

## AMENDMENTS TO THE SPECIFICATION

Page 1, lines 5-15:

### Technical Field

a1 The invention relates to a method for extending the data word length of any desired first, N-digit data word to form a second, (N+M)-digit data word for data transmission and data processing, and to an apparatus for carrying out the method.

### Description of Related Art

a2 In the field of IT, data processing and data transmission are essentially digital processes. Associated digital circuits or processing programs process binary information, that is to say information having two values. Particularly when carrying out computational operations, the two's complement representation of the respective binary number has been found to be extremely advantageous; because, with such representation, subtraction can easily be traced back to addition of the two's complement of the number. With this two's complement representation, the MSB (Most Significant Bit) denotes a sign bit, the relevant digit value being assessed as negative.

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### Summary of the Invention

a3 It is therefore the object of the invention to provide a data word expansion method for expanding a first, N-digit data word to produce a second, (N+M)-digit data word without implementation of the method entailing increased hardware requirements

a3 and without there being the possibility of numerical-range overflows occurring when the converted number is negated.

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Page 3, lines 29-30 through Page 4, lines 1-14:

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**Brief Description of the Drawings**

The invention is explained below with a description of one embodiment on the basis of the drawings, in which

a4 Figure 1 shows a basic sketch of an apparatus for carrying out the method according to the invention, and

Figure 2 shows conversion of the binary number having the decimal value "-78", as carried out using this apparatus.

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**Detailed Description**

Figure 1 shows a basic sketch of an apparatus for carrying out a method according to the invention for extending the data word length of an eight-digit binary number in two's complement representation to produce a second, sixteen-digit binary number. For this, an 8-bit storage register 1 is connected to a 16-bit data channel 7.

a5 Each of the 8 storage cells of the storage register 1 is hard-wired to an associated bit position of the 16-bit data channel 7. This association is such that the 8-bit word from the source, i.e. from the storage register 1, is in the more significant bit positions of the 16-bit data channel, i.e. the storage cell for the first bit 3 of the storage register 1 is connected to the ninth bit position of the data channel 7, and the storage cell for the

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as eighth bit of the storage register 1 is coupled to the sixteenth bit position of the data channel 7.

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